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WORD CONCEPT OF ILLITERATES AND LOW-LITERATES: WORLDS APART?

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1 Introduction

Over the past 25 or so years extensive research has been done into the development of children's metalinguistic awareness and its role in learning to read. Although results contradict each other regarding the question which of the two appears first, there is undoubtedly some kind of interrelationship between metalinguistic skills and literacy. Some suggest that metalinguistic awareness facilitates learning to read and write (e.g. Bus & Van IJzendoorn, 1999; Karmiloff-Smith, Grant, Sims, Jones, & Cuckle, 1996; Sharpe & Zelazo, 2002), whereas others (e.g. Ehri, 1975; Gombert, 1992; Olson, 1994, 1996; Roberts, 1992) suppose that it is the other way round, viz. that literacy stimulates the development of metalinguistic skills. This paper deals with only one aspect of metalinguistic knowledge, the word concept, which can be defined as an awareness of the word as a linguistic unit demonstrated by the ability to isolate words in a stream of spoken language.

2 Background

2.1 Research among children

Results of previous research have suggested that there is a steady progression in the development of word awareness in children that runs parallel with age and/or literacy acquisition (Downing & Oliver, 1974; Edwards & Kirkpatrick, 1999; Ehri, 1975). In spite of minor differences which may have been caused either by the variety of stimuli that were used or by the way in which the studies were carried out (with or without pre-experimental training), the results of these studies were broadly similar and indicated that young children under 6 or 7 generally do not have a clear concept of words as linguistic units (Downing & Oliver, 1974; Ehri, 1975; Holden & MacGinitie, 1972). Papandropoulou & Sinclair (1974) studied word awareness in 4- to 10-year-old children. They found that young children are not able to distinguish between the word and the object denoted by the word. Young children consider a word to be synonymous with its referent. When asked to name a long word, the youngest children mentioned words indicating objects that were long or big in size. For young children the linguistic term 'word' is inextricably linked with the object referred to by a word. Only gradually a child

develops knowledge of a word as a linguistic unit, which can be distinguished from its meaning.

Already in 1955, Karpova found that 3-7-year-old children were hardly able to break up a sentence into its smaller lexical units (Karpova, 1966). When asked to count the number of words in a sentence, the youngest children appeared to regard a sentence as an unbreakable semantic unit. A 7-year-old boy for example was asked how many words the sentence: 'The boy is laughing' contained. He replied that it consisted of only one word, because 'only one boy is laughing.' Somewhat older children began to analyse sentences in a more formal way, but only some of the oldest children that took part in the study were able to split up sentences into separate words, although they usually left out prepositions and conjunctions.

Research shows that older children (8-12-year-olds) are better at metalinguistic tasks such as segmenting sentences into words than younger children (4-7-year-olds). A remarkable increase in performance usually shows around 7 or 8 years of age. The gap between the correct scores of younger children on the one hand and older children on the other is nowadays generally attributed to literacy, although there is no unequivocal evidence which emerges first, metalinguistic knowledge or the acquisition of literacy.

Apart from the difference in performance of the respective age groups, a significant difference was found in the number of correct responses to open and closed class words. Open class words (e.g., nouns, adjectives and verbs) are usually easier to be identified than closed class words (e.g., conjunctions, prepositions and articles) (Karpova, 1966; Holden & MacGinitie, 1972), because open class words have more semantic content and therefore the relationship between word and referent is more transparent than for closed class words, which most often have a more abstract meaning. Not only open class words are easier to detect in a sentence than closed class words, but also disyllabic words are more easily detected than monosyllabic words, because (i) the latter can be linked to a preceding or following word, especially function words such as the articles *de* ('the') and *een* ('a') (see appendix), and (ii) contrary to disyllabic words, monosyllabic words are often unstressed.

Karmiloff-Smith et al. (1996) introduced a new methodology to assess children's word awareness. They called it an on-line task, because it imitated normal language processing, which is in their opinion not the case in older off-line tasks such as sentence segmentation or word judgment. In contrast with findings of previous studies, they claimed that, thanks to the use of this methodology, it had become clear that 4- and 5-year-old children do have the ability to isolate words in a meaningful context, since 75.3% of the 4-year-old and 96.2% of the 5-year-old children scored correct.

This new methodology was replicated in a cross-linguistic study by Kurvers & Uri (2006) among 4- and 5-year-old children in The Netherlands and Norway with strikingly different results. In their study both the 4- and 5-year-old children scored only 26.6% correct. Kurvers & Uri suggested that literacy may play a role in the development of a child's word concept.

2.2 Research among adults

In short, the studies among children showed that the older the children were, the higher their scores on metalinguistic tasks. Although at present literacy is regarded to be an important stimulating factor, the cause of this progressive development is, however, not yet clear. It might be a result of several factors that coincide when a child grows up,

viz. linguistic development, cognitive development and literacy acquisition. Therefore, it is interesting to carry out the same kind of study among illiterate adults, because on the one hand pre-reading children are to a certain extent comparable to illiterates, in the sense that neither of them is able to read. On the other hand, illiterate adults are, in contrast to pre-reading children, proficient language users. So, studying the development of word awareness in adult illiterates provides an opportunity to investigate whether the development of word awareness is indeed connected to literacy and not to linguistic development or the development of cognitive skills. Of course, these three factors cannot be disentangled in children, since they develop simultaneously in children. If literacy plays a crucial role in the acquisition of word concept, the three factors can be separated better in illiterate and literate (with only a few years of literacy learning) adult immigrants. This context resembles the situation of children, because most illiterate immigrants from outside Europe have not attended school and have therefore not got any instruction concerning the concept of word, whereas most European illiterates did attend school.

The present study was set up in order to investigate the relationship between the development of word concept and literacy in adult second language learners, and to make a comparison between the results of this study and two previous studies among children, those of Karmiloff-Smith et al. and Kurvers and Uri. Taking into account the results of previous research among children, which suggests that literacy plays a role in enhancing one's metalinguistic knowledge, and thus one's word concept, it was hypothesized that low-literates would give more correct answers than illiterates. Some previous research, although with a different type of task (sentence segmentation), indicated the same (Gombert, 1994; Kurvers, 2002). Moreover, all participants were expected to be better on open class words than on closed class words, as found in several older studies with children, and better on disyllabic words than on monosyllabic words for reasons explained above.

Therefore, the hypotheses in this study are as follows:

H1 Low-literates perform better on the word awareness task than illiterates.
H2 Open class words will be better recognized than closed class words.
H3 Disyllabic words will be better recognized than monosyllabic words.

Finally the results of this study will be compared with the findings of Karmiloff-Smith et al. (1996) among monolingual English children and with those of Kurvers & Uri (2006) among 4- and 5-year-old monolingual children in The Netherlands and Norway.

3 Methods

3.1 Participants

A small-scale study was carried among 30 adult immigrant participants in The Netherlands, viz. a group of 15 full illiterates and a group of 15 low-literates. Even though the participants came from several different native countries, most of them were from Morocco (13) and Somalia (8). Six of the Moroccan participants spoke Moroccan Arabic and seven of them spoke a Berber language. The other participants

came from Iran, Turkey, Eritrea, China, Mauritania, Syria, Tibet and Afghanistan. All of them had a low SES (socio-economic situation).

Illiterates

In The Netherlands the compulsory education law, which prescribes that each child should go to school, was enacted in 1901. Consequently, there are no 'real' illiterates in the Netherlands any more. Therefore the illiterate participants were recruited from immigrants who had just started to attend literacy courses. The participants of this group had not had any schooling whatsoever in their native country. In order for the participant to be included in the study, she should have a reasonable knowledge of Dutch (at least A1 of the CEF, the Common European Framework of Reference for Languages), in speaking as well as in listening skills, because the tests were carried out in Dutch, their L2.

In sum all participants of this group met the following requirements:

- no education in native country,
- Dutch speaking skills at least at level A1 of the CEF (assessed by the teachers),
- not able to read nor write.

The mean age of the participants in this group was 43.9 years ranging from 34 to 57. The mean length of residence was 16.6 years.

Low-literates

Since the first group (full illiterates) could only be found among those learning Dutch as a second language, the second group (low-literates) was composed of immigrants, too. This was done in order to avoid unintended side effects which could obscure the results when the scores of immigrant illiterates would be compared with those of native low-literates. All participants of this group had not been to school in their native country and had acquired literacy in the Netherlands, except for one woman who had gone to school in Eritrea for three months, but had learned to read and write in the Netherlands, just like the other participants. This group qualifies as low literate, because the participants had reached reading level A1 of the CEF. On average the participants of this group had been to school in the Netherlands for about two years.

The criteria for this group were:

- approximately two years DSL education in the Netherlands,
- no education in home country,
- speaking Dutch at least at A1 level of the CEF.

The mean age of the participants in this group was 35.8 years, with a range from 24 to 54. The mean length of residence was 8.8 years. In both groups women heavily outnumbered men. In the illiterate group there were three male participants, in the low-literate group two.

3.2 Instruments

Reading task

To both groups a reading test was administered in order to assess the participant´s reading level. It may sound strange to administer a reading test to an illiterate, but this was done in order to examine whether a participant was indeed unable to read. The reading task for the illiterates consisted of a few easy words, whereas the low-literates

had to read aloud a nine-line paragraph from a text after which they were asked two questions about it in order to examine whether they had understood the text.

Word awareness task

In order to investigate whether the development of word awareness in illiterates and low-literates resembles that in children the Karmiloff et al. study was replicated. For the word awareness task a text was taken from a book edited for beginning learners of Dutch as an L2 with stories from oral traditions (Kurvers, 2004:12). The text (a Berber folk story about a man who leaves his seven daughters behind in the wood) was slightly adapted which means that two sentences were added. Otherwise it was not possible to select the intended 32 target words, 16 open and 16 closed class words, which were divided into equal subsets of mono- and disyllabic words, which were in turn equally divided between consonant-initial and vowel-initial words. Like in Karmiloff et al., care was also taken for the possibility that elision errors might occur. This kind of mistake is made when the participant adds the last consonant of the preceding word to the target word, e.g. in the sentence: *Hij nam ook…* (He took also…) giving *mook* as target word instead of *ook*. Therefore in the selection of vowel-initial targets preference was given to those vowel-initial words that were preceded by a consonant-final word. There were 16 vowel-initial words, 13 of them were preceded by words ending in a consonant, 3 of them by words ending in a vowel, e.g. *de oudste* (the eldest), *hij at* (he ate), *ze alles* (she all). See Appendix 1 for an overview of all the target words.

The first two lines of the story did not contain target words. Besides, the first word of a sentence was not selected as a target.

3.3 Procedure

The study was carried out in the same way as described by Karmiloff-Smith et al. (1996). First of all the participants were told that they were going to listen to a story and that they were supposed to repeat the last word when the narrator paused. In order to check whether the participants had understood the instructions a short practice story was administered in which six open class words were selected as targets. No explanation was given as to what a word is. Only when a participant gave an incorrect answer, e.g. by giving a multiword answer, feedback was given in such a way that it indicated which word of the sentence was the last one, but otherwise without any explanatory details. During the actual task no feedback was given at all.

The story was read in a lively tone, at a normal pace and with as natural an intonation as possible. Care was taken to avoid undue emphasis on target words. After each pause and the participant's answer part of the sentence was read again in order to facilitate resuming the thread of the story.

One illiterate participant, a 57-year-old Moroccan woman, had to be excluded from this task, because she was unable to answer any question related to language already in the practice items. One low-literate participant did seem to understand the instruction, but she turned out to be an extreme outlier in not answering any of the items correctly. Her reactions were not included either. Therefore, in the end only 28 participants were used in this analysis, 14 illiterates and 14 low-literates.

After the task had been administered, the answers were analysed for word types (open class versus closed class; monosyllabic versus disyllabic). Subsequently, all answers were classified according to the categories described by Karmiloff-Smith et al.

They distinguished the following classes of answers (the underlined words are the target words):

Correct answer: e.g. ***nieuwe*** (new) in the sentence: 'Op een dag zei zijn nieuwe …' (One day said his new …).

Incorrect answer:

- Multiword answer: e.g. *niet genoeg* ***eten*** (not enough food) instead of: ***eten***.
- Anticipation: e.g. *vrouw* instead of ***nieuwe*** in the sentence: '*Op een dag zei zijn* ***nieuwe*** …'
  wife instead of new in the sentence: 'One day said his new …'
- Single syllable: e.g. *leen* (instead of ***alleen***) lone (instead of alone)
- Elision (resyllabification):
  adding the last consonant of the preceding word to the target word; e.g. in the sentence: *Hij nam* ***ook***… giving *mook* as target word instead of ***ook*** (He took also …).
- Non-target single word:
  e.g. *genoeg* instead of hout in the sentence: 'Toen ze genoeg hout…'
  enough instead of wood in the sentence: 'When they enough wood ...'
- No response: I don't know.

4 Results

4.1 Illiterates versus low-literates

The internal consistency of the instrument was high (Cronbach's alpha .93). First, the correct scores of the illiterate group were compared to those of the low-literate group. As can be seen in Table 1, the mean correct score of the illiterate group was 14.79 (sd 7.54) and of the low-literate group 22.86 (sd 6.16). To examine the differences between the two groups a t-test was performed on the total amount of correct scores of both groups. The scores of the low-literates are significantly higher than those of the illiterates (t= -3.10; df =27; p=0.005). So low-literates are generally better at identifying word boundaries than illiterates.

Table 1: Correct scores on the awareness task by group and word class

Word class	Group	Mean (sd)	% correct
Open and closed	Illiterates	14.79 (7.54)	46.2 %
(maximum= 32)	Low-literates	22.86 (6.16)	71.5 %

4.2 Word types

As can be seen in Figure 1 and Table 2 and might be expected from the results of studies among children, which showed that metalinguistic awareness develops together with literacy, the group of low-literates performed better than the illiterate group on all variables. Roughly, the scores of both groups run parallel to each other, the low-literates scoring higher than the illiterates on all word categories. On open class words,

the difference is 28%, on closed class words 22%, on monosyllabic words 25% and on disyllabic words also 25%. So, the results show a clear pattern.

Table 2: Mean percentages correct by group and word type

Group	Open	Closed	Monosyllabic	Disyllabic
Illiterates				
Mean	54.9%	37.5 %	41.9 %	50.4 %
Sd	(29.0)	(21.2)	(21.8)	(26.7)
Low-literates				
Mean	83.0 %	59.8 %	67.0 %	75.8 %
Sd	(20.1)	(19.6)	(19.8)	(19.7)

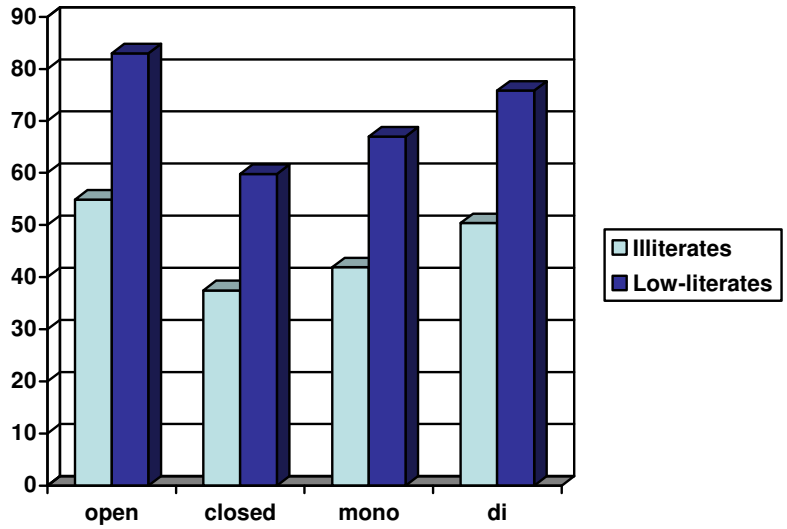

Figure 1: Percentages correct by group and word type

Moreover, a paired samples t-test was carried out to investigate whether the characteristics of the 32 target words proved to be key factors in giving the right answer, both for illiterates and literates. It revealed that word class as well as the number of syllables are of great importance. Both groups had a significant higher correct score on open than on closed class items, see Table 3 (t=7.08; p=.000). Besides, disyllabic words were significantly better identified than monosyllabic words (t=-5.28; p=.000).

Table 3: Word types compared

Word items	t	df	p
Open/closed class	7.081	27	.000
Mono-/disyllabic	-5.277	27	.000

4.3 Answer categories compared

As already said, all answers were classified according to the categories described by Karmiloff-Smith et al. After that an analysis of errors was made. Table 4 presents the response types as percentages of the total amount of responses; the three most frequent error types are presented separately, the other types are taken together in the last column. In the first row the results for the present study are given; rows 2, 3 and 4 provide the response types found by Kurvers & Uri (2006) and Karmiloff et al. (1996).

Table 4: Overview of response types expressed as percentages of all answers in 4 corpora

	Group	Multi-word	Anti-cipation	Non-target single word	Else
Dutch	Illiterates	41.5	4.7	5.1	2.5
(Onderdelinden)	Low-literates	20.8	0.7	4.7	2.3
Dutch (Kurvers)	4-year olds	52.0	15.4	2.0	5.9
	5-year	54.8	12.1	1.5	6.5
Norwegian (Uri)	4-year	46.3	15.1	3.7	6.0
	5-year	50.9	12.5	3.1	4.6
English(Karmiloff)	4-year	17.5	2.9	2.3	0.8
	5-year	0.8	0.0	1.0	2.1

Of all incorrect answers multiword reactions were by far the most common. This holds good for both groups. 41.5% of the total amount of responses by the illiterates were multiword answers and for the low-literates 20.8%. Other errors were anticipations (guessing the next word of the sentence) and giving a non-target single word, but these error types occurred only incidentally. There were not many monosyllabic reactions either and those that occurred were mainly caused by the selection of the ambiguous item *naartoe* (to) as a target, of which the last syllable can also be considered a word in itself. Of the total amount of 18 monosyllabic answers for both groups, *naartoe* (to) was involved 11 times, *allang* (for a long time/long since) 6 times and *alleen* (alone) 2 times. Almost none of the participants gave 'no reply'. Just like in the other studies, not any elision error was made, in spite of the fact that some targets were deliberately selected in order to elicit such errors.

Apart from the multiword answers, which are in the present study more numerous than in the Karmiloff-Smith et al. study (which of course is directly related to the high percentages of correct answers in their study), there are less anticipations compared to the outcomes of Kurvers & Uri. This is probably due to the fact that this study was carried out in a second language.

4.4 Correct scores of the four studies compared

In Table 5 the correct scores of both groups in this study are presented together with those of Karmiloff-Smith et al. (1996) and Kurvers & Uri (2006).

Table 5: Mean scores and percentages correct scores along with the results of the studies by Karmiloff-Smith et al. and Kurvers & Uri.

Word class	Group	Mean (sd)*	% correct
Netherlands (Onderdelinden) n=28			
Open class words	Illiterates	8.79 (4.64)	54.9
	Low-literates	13.29 (3.22)	83.0
Closed class words	Illiterates	6.00 (3.40)	37.5
	Low-literates	9.57 (3.13)	59.8
Netherlands (Kurvers, 2006) n=32			
Open class words	4-year-olds	3.93 (3.09)	24.6
	5-year-olds	3.87 (4.61)	24.2
Closed class words	4-year-olds	3.94 (4.21)	24.6
	5-year-olds	4.20 (4.06)	26.3
Norway (Uri, 2006) n=24			
Open class words	4-year-olds	4.73 (1.56)	29.5
	5-year-olds	4.70 (1.89)	29.3
Closed class words	4-year-olds	4.45 (3.42)	27.8
	5-year-olds	4.23 (3.14)	26.4
England (Karmiloff-Smith et al., 1996) n=48			
Open class words	4-year-olds		76.8
	5-year-olds		97.1
Closed class words	4-year-olds		73.7
	5-year-olds		95.3

* For the Dutch/Norwegian and the present study means and standard deviations are also presented, but not for Karmiloff-Smith et al.

When comparing the present study with the previous studies by Karmiloff-Smith and Kurvers & Uri, it becomes clear that the illiterates were not nearly as good as the English children in the Karmiloff-Smith et al. study. In fact there is a great difference between the correct scores of the English children and those of the illiterates in this study. However, the illiterates performed better than the 4- and 5-year old Dutch and Norwegian children.

5 Conclusions and discussion

On the basis of previous literature, it was hypothesized that

H1 Low-literates perform better on the word awareness task than illiterates.
H2 Open class words will be better recognized than closed class words.
H3 Disyllabic words will be better recognized than monosyllabic words.

The first hypothesis is confirmed by the results found in Section 4.1, viz. that the scores of the low-literates are significantly higher than those of the illiterates. So low-literates are better at isolating words in spoken language than illiterates. The second and third hypothesis are confirmed as well. In Section 4.2 (Table 3), both illiterates and low-literates turned out to have significantly higher correct scores on open than on closed

class items and on disyllabic words compared to monosyllabic words. Realizing that the main difference between the groups was being literate or not, we can draw the conclusion that the word awareness of the low-literate group must have been enhanced by means of their literacy acquisition. Evidently, two years of literacy education have brought about a significant increase in performance of the low-literate group. Although we controlled for size of vocabulary, we cannot exclude the possibility that small differences in vocabulary size may have influenced the results of the task. The results of the present study seem to show that word awareness does not have much to do with age or with linguistic or cognitive development, otherwise the illiterates and low-literates should have performed better than they actually did. So, we can conclude that literacy is an important stimulating factor in the development of one's word concept.

Striking results, however, are the differences found between the various studies. We will compare the adult L2 learners of this study first with the English children and subsequently with the Dutch and Norwegian children.

Adult L2 learners compared with the English children

There are no ready answers to explain the gap in performance between the English children and the adult L2 learners, but one reason is probably the background of the children who participated in the Karmiloff study. They all came from (lower) middle class families. Such families usually introduce their children to books and other printed materials at an early age. In this way children are already made familiar with print before they actually learn to read. Moreover, at school, English children are probably more often and at an earlier moment confronted with early reading practices than in The Netherlands and Norway. Presumably, the English (lower) middle class children of Karmiloff's study had been exposed to printed language more often than the adult L2 learners of the present study. The latter reported that they did not have many literacy experiences in the sense that they had only seldom seen any printed material in their native country. Both groups of adult L2 learners were not literate when living in their native country and only learned to read and write after their arrival in the Netherlands. It is quite conceivable that a person, whether a child or an adult, who comes into contact with written language and sees the spaces that are used between the individual words, will become more aware that oral language also consists of individual units of speech. This may not only explain the fact that the illiterates lagged far behind the English Kindergarten children, but it may also clarify the difference between the illiterate and low-literate group, as the low-literates had more experience with printed language than the illiterates.

One might object that the differences between the adult L2 learners and the English children should be attributed to the fact that the present study was carried out in the L2 of the adults and that they probably did not know each word that was used in the story. This is, however, not very plausible, since the story was taken from a book, which was especially suitable for L2 learners. Moreover, from the participants' reactions (either facial or verbal) it was clear that they understood the content of the story very well. Their reactions varied from laughing at a funny episode to asking concerned questions about the intentions of the witch and breathing sighs of relief when the story took a turn for the better.

Adult L2 learners compared with the Dutch and Norwegian children

When comparing the scores of the Dutch and Norwegian pre-reading children with those of the adult illiterates, one might reasonably have expected the illiterates to perform as badly as the 4- and 5-year-old Dutch and Norwegian children, since neither of them was able to read nor write. It is, however, remarkable to find that the illiterates perform better on this task than the 4- and 5-year-old Dutch and Norwegian children. This difference in performance may be caused by the fact that the illiterates who participated in this study had already learnt an L2. This may have stimulated the development of their word concept, since bilingualism is supposed to foster one's metalinguistic awareness (Bialystok, 1986). When one realises that bilingualism may enhance one's word awareness, we can assume that the scores of both groups would have been even lower when this study had been carried out among monolingual illiterates and low-literates. This all the more strengthens the claim that literacy plays an important role in the development of the concept "word".

Furthermore, the adult participants found themselves in a different situation from the children. The adults were taking an L2 course and therefore they were probably more focused on words than the Dutch and Norwegian children in the study by Kurvers & Uri. Finally, it is possible that a teacher, in order to increase the learners' vocabulary, had just discussed one or more of the target words orally. Some of the target words, such as *vader* (father), *oor* (ear), *arm* (poor) that had relatively high correct scores, may well have appeared in vocabulary exercises. In that case words are usually better recognized, since they have just been dealt with in class.

Open and closed class words in the three studies

Contrary to the findings of Karmiloff-Smith et al. and Kurvers & Uri, who found no differences in the correct scores on open and closed class words, the present study reveals a significant difference between open class and closed class items. These outcomes are in line with several of the older studies (Karpova, 1966; Holden & MacGinitie, 1972). It shows that both illiterates and low-literates performed significantly better on open class words than on closed class words. Yet, this may not be as remarkable as it seems to be, when one realises that the participants of this study were beginning L2 learners. It is common knowledge that L2 learners first and foremost focus on open class words, because these words explicitly convey content and this is exactly what L2 learners need in their communication. Analyses of the speech of L2 learners show that L2 learners, at least in the initial stages of the L2 acquisition, mainly use open class words (e.g. Van de Craats, 2000:32-34). So, L2 learners are at first not very much concerned about closed class words, since these words are mainly used for syntactic rather than for semantic purposes. Therefore, it is not surprising to find that open class words were significantly better isolated than closed class words.

Open class words that were best recognised by both groups were *arm* (poor) and *aap* (monkey). Both words have a clear meaning. Not surprisingly, closed class target words were also isolated in proportion to their semantic significance. The more lexical content a word had, the better it was recognised as an individual unit of speech.

Word accent seemed to be an influential factor, too. This might explain the difference between monosyllabic and disyllabic words as well. E.g. words like *ander* (other), *eigen* (own) and *waarom* (why) were better isolated than words like *een* (a or an) or *z'n* (his), the latter being unstressed. A closed class word like the article *de* (the) was not noticed to be an individual word by any single participant. This is in accordance with

previous findings (Kurvers, 2002) and comprehensible as Van de Craats states: "It is evident that they [L2 learners] focus their attention on lexical items with the clearest content, and, that they do not even perceive 'unimportant' small function words (often unstressed)" (2000:33). Evidently, both a word's meaning and whether a word was emphasized or not determined the degree to which a word was isolated as an individual linguistic unit.

Moreover, owing to the ceiling effect among the English children, it was impossible to find differences between the two groups. The poor performance of the Dutch and Norwegian children made it equally impossible to detect differences between both groups.

Conclusion

Before making a few concluding remarks, two restrictions should be made concerning the interpretation of the present results and the comparison with the previous studies by Karmiloff-Smith et al. and Kurvers & Uri. The present study was only a small-scale study, so the data from one participant may considerably influence the results of the group as a whole. One might be inclined to think that this has not happened, because the results were quite uniform. Nevertheless, one should always be aware of such unintended effects. The other reservation concerns the comparison between the results of the study by Kurvers and those of the present study, since the story that was used in the present study was not the same as the one used by Kurvers. This was inevitable because the groups of participants greatly differed, the one involving children, the other adults. One does not read a children's story to adult participants, of course.

In this study it was shown that low-literates performed significantly better on a metalinguistic word awareness task than illiterates. Two years of literacy education caused an increase in performance of around 25%. The findings of the present study support the theory that literacy plays a crucial role in the development of one's metalinguistic awareness and confirm the conclusion of Kurvers & Uri that those who cannot read nor write, whether adults or children, do not have a clear word concept and indicate that literacy acquisition enhances one's awareness of words.

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Appendix 1: Target words in the story

	Open class		**Closed class**	
	Vowel- initial	Consonant-initial	Vowel-initial	Consonant-initial
Mono-syllabic	Aap (monkey) Arm (poor) At (ate) Oor (ear)	Hout (wood) Nacht (night) Plaats (place) Kwam (came)	Een (a) Ook (also) Op (on) Uit (out)	Zijn (his) Hier (here) De (the) Ver (far)
Di-syllabic	Eten (eat) Oudste (oldest) Eigen (own) Ander (other)	Nieuwe (new) Koken (boil) Hete (hot) Vader (father)	Alleen (alone) Over (over) Allang (long) Alles (all)	Tegen (against) Jullie (you) Naartoe (to) Waarom (why)